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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* DEBRA L. WOODS

Appeal No. 2003-1154  
Application No. 09/534,474

ON BRIEF

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Before OWENS, RUGGIERO, and DIXON, *Administrative Patent Judges*.  
OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This appeal is from the final rejection of claims 1, 2, 7-10, 12, 13, 15-19, 21 and 22. Claims 3, 5, 6 and 20 stand objected to as dependent upon a rejected base claim but allowable if rewritten in independent form. Claims 4, 11 and 14 have been canceled.

*THE INVENTION*

The appellant claims a keyboard which, the appellant states, has command keys arranged to allow for faster activation of common word processing functions, and letter keys arranged to

promote easier learning and faster typing (specification, page 1, lines 5-8). Claim 1 is illustrative:

1. A keyboard for use in performing typing tasks comprising:  
a base having an upper side; and  
a plurality of keys arranged in an array, including multiple rows with one of the multiple rows being a home row, on the upper side of said base, said keys including letter keys, a tab key, a backspace key, at least three shift keys for establishing capital letters in combination with the letter keys, and at least one function key, each of said letter keys corresponding to a respective letter of an alphabet of a language, wherein said at least three shift keys are located in a lower central portion of said array, grouped directly adjacent one another, and arranged in at least two of the multiple rows, said at least three shift keys being adapted to be engaged by thumbs of a user, wherein one of said rows includes selected ones of said letter keys arranged to spell out at least three, consecutively arranged multi-letter words when read from left to right and wherein both the tab and backspace keys are centrally located within the letter keys and located in a row above the home row.

#### THE REFERENCES

Montgomery	4,211,497	Jul. 8, 1980
Maynard et al. (Maynard)	5,557,299	Sep. 17, 1996
Klauber	5,620,267	Apr. 15, 1997
Chen	5,739,776	Apr. 14, 1998
Harada et al. (Harada)	6,107,994	Aug. 22, 2000
(effective filing date on or before Sep. 26, 1997)		

Watanabe et al. (Watanabe) <sup>1</sup> (Japanese Kokai)	8-249097	Sep. 27, 1996
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*Computer Dictionary* 21-22, 433 (Microsoft Press, 3<sup>rd</sup> ed. 1997).

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<sup>1</sup> Citations herein to Watanabe are to the English translation thereof which is of record.

*THE REJECTIONS*

The claims stand rejected under 35 U.S.C. § 103 as follows: claim 1 over Watanabe in view of Harada, the computer dictionary and Montgomery; claims 2 and 22 over Klauber in view of Montgomery; claims 7-10, 12 and 21 over Watanabe in view of Chen; claims 13, 15, 16, 18 and 19 over Watanabe in view of Harada and the computer dictionary; and claim 17 over Watanabe in view of Harada, the computer dictionary and Maynard.

*OPINION*

We affirm the rejection of claims 2 and 22, and reverse the rejections of the other claims. Regarding the reversed rejections, we need to address only the independent claims to which the rejections apply, i.e., claims 1, 7 and 13.

*Claim 2*

Claim 2 requires a keyboard having multiple rows of keys including letter keys, a tab key, a backspace key, at least one shift key, and at least one function key, and also requires that one of the rows includes selected ones of the letter keys arranged to spell out at least three consecutively arranged multi-letter words when read from left to right.

Klauber discloses a keyboard having multiple rows of keys including a tab key, a backspace key, a shift key, a function

key, and the standard arrangement of letter keys (figures 2-10, 12 and 13). Klauber modifies the standard keyboard spacebar region so that one or both thumbs may be used comfortably to activate the spacebar and/or one or more non-alphanumeric keys such as cursor movement, home, end, page up, page down, escape, function, insert, tab, backslash, backspace/erase, and delete keys (col. 3, lines 21-24 and 57-62). Klauber teaches that the invention is not limited to the standard keyboard design shown in the figures but, rather, includes other arrangements such as a single keyboard having two groups of alphanumeric keys, one group on the left reachable by the left hand fingers and one group on the right reachable by the right hand fingers (col. 13, lines 45-47; col. 14, lines 1-11 and 24-49). Klauber's invention "is not restricted to computer and electric typewriter keyboards but can be used in any type of input typing system" (col. 15, lines 5-7), and "comprises any keyboard wherein one or more non-alphanumeric keys are located in any region which in traditional keyboards has typically been occupied by some part of the spacebar" (col. 4, lines 21-24).

Montgomery discloses a keyboard wherein, to increase the typing speed of the two and three letter combinations that are used most frequently, such as "the", "of" and "and", the keyboard includes sets of adjacent letter keys that form those

combinations (col. 2, lines 56-61; col. 3, lines 4-10 and 14-18). Montgomery teaches that "it is envisioned that the keyboards of the present invention should have at least three trigrams [three letter combinations] selected from the ten most commonly used trigrams in sequence, and also to have the letters of at least the two most commonly used two letter words adjacent and in sequence" (col. 17, lines 32-37).

The appellant argues that Klauber desires to maintain the conventional letter key positioning and to alter only the spacebar zone (reply brief, page 3). Klauber teaches that the alteration to the spacebar zone can be used with any keyboard and any typing input system (col. 4, lines 21-24; col. 15, lines 5-7). Klauber, therefore, would have indicated to one of ordinary skill in the art that the invention is useable with keyboards having letters grouped to form words as taught by Montgomery.

The appellant argues that modifying Klauber's keyboard would require using five rows of letter keys as taught by Montgomery (reply brief, page 3). Montgomery does not require five rows but, rather, merely requires a plurality of rows (col. 18, lines 50-54). Thus, the combined teachings of Klauber and Montgomery would have fairly suggested, to one of ordinary skill in the art, including Montgomery's frequently-used letter sets in

Klauber's plurality of rows to provide increased typing speed of those letter sets as taught by Montgomery.

The appellant argues that Montgomery discloses arranging the letter keys such that only two multi-letter words are in sequence, whereas the appellant's claim 2 requires three consecutive multi-letter words (brief, page 19; reply brief, page 3). Montgomery teaches that there should be, in sequence, letters forming at least three of the most commonly used three letter combinations and at least two of the most commonly used two letter combinations, most of which are words (col. 17, lines 32-37; tables I and II). Montgomery, therefore, would have fairly suggested, to one of ordinary skill in the art, using more multi-letter words in sequence on Klauber's keyboard than the two specifically disclosed by Montgomery (figures 12 and 18).

The appellant argues that because Montgomery does not disclose any desirability of arranging words sequentially, Montgomery's positioning of two multi-letter words in sequence is a coincidence (reply brief, page 3). Montgomery's disclosure of two words in sequence (figures 12 and 18) would have indicated to one of ordinary skill in the art that the suitable arrangements of the multi-letter words include sequential arrangements. Hence, Montgomery would have fairly suggested, to one of ordinary

skill in the art, positioning two or more multi-letter words in sequence on Klauber's keyboard.

For the above reasons we conclude that the keyboard claimed in the appellant's claim 2 would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103. Accordingly, we affirm the rejection of that claim.

*Claim 22*

Claim 22, which depends from claim 2, requires that at least one of the multi-letter words is a four letter word and another of the multi-letter words is at least a three letter word.

The appellant argues that a three letter word and a four letter word would use up all seven letters in Montgomery's longest exemplified keyboard row, leaving no room for the appellant's third multi-letter word (brief, page 20; reply brief, page 4). Montgomery teaches that the multi-letter words can be two, three and four letter words, and that a number of the words should be used (col. 17, lines 32-37; tables I and II; figure 18). This teaching, and the teaching that letters on a keyboard are grouped as frequently used words to increase the typing speed of those words (col. 2, lines 56-61), would have fairly suggested, to one of ordinary skill in the art, arranging letters on Klauber's keyboard as two letter to four letter

frequently used words for increased typing speed of those words. Montgomery's indication that the suitable arrangements of the words on a keyboard include a sequential arrangement (figures 12 and 18) would have fairly suggested, to one of ordinary skill in the art, arranging the words on Klauber's keyboard, which has more than seven keys in a row, in sequences of the desired number of words.

We therefore affirm the rejection of claim 22.

*Claim 7*

Claim 7 requires tab and backspace keys that are centrally located within the letter keys and are located in a row above a home row.

Watanabe discloses a keyboard having keys such as tab, backspace, alt, shift, delete, enter, caps and escape in the center portion of the keyboard so that to press them, a small finger does not have to be used and the wrist does not have to be rotated outwardly (sections 0009 and 1103). In the exemplified keyboard relied upon by the examiner (answer, page 3), the backspace key is in the top row of keys, just to the right of the centerline of the array of keys, and the tab key is in the second row from the top, just to the left of the centerline (figure 1).



Chen discloses a keyboard wherein a tab key and a backspace key are located just above a spacebar, in a space between left side and right side key arrays, so that the tab and backspace keys can be pressed without lifting the hands from a wrist pad located just below the spacebar (col. 2, lines 44-49; figure 1).

The examiner argues that Chen discloses a keyboard having a tab key in the same row as a backspace key, and that a comparison of the keyboard in Watanabe's figure 1 with the prior art keyboard in figure 5b, which has a backspace key in the upper right corner of the key array and a tab key at the left end of the second row of keys from the top, shows that the figure 1 tab and backspace key locations have been changed relative to the prior art (answer, page 3). To arrive at the appellant's key arrangement, the examiner argues, one would merely have to switch the positions of the backspace and enter keys in Watanabe's figure 1 or, since the enter key occupies two key spaces, add a backspace key next to the tab key and reduce the size of the enter key to one key space (answer, page 8). The examiner argues that the function of the backspace key in Watanabe's figure 1 would not be affected by moving it down one row, and argues, in reliance upon *In re Japiske*, 181 F.2d 1019, 86 USPQ 70 (CCPA

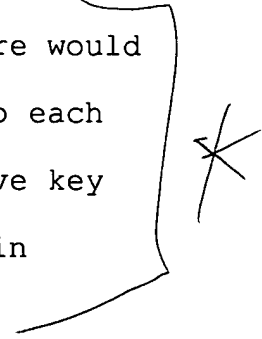
Appeal No. 2003-1154  
Application No. 09/534,474

1950), that a change in location is generally recognized as being within the level of ordinary skill in the art (answer, page 3).

In *Japiske* the court stated that there is no invention in changing the position of a hydraulic power press' starting switch because doing so would not modify the operation of the device. See *Japiske*, 181 F.2d at 1023, 86 USPQ at 73. The examiner considers that statement to establish a *per se* rule that, in general, changing a location would have been obvious to one of ordinary skill in the art. As stated by the Federal Circuit in *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995), "reliance on *per se* rules of obviousness is legally incorrect and must cease."

For a *prima facie* case of obviousness to be established, the teachings from the prior art itself must appear to have suggested the claimed subject matter to one of ordinary skill in the art. See *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a *prima facie* case of obviousness. See *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Switching the positions of the backspace and enter keys in Watanabe's figure 1 as proposed by the examiner would require changing the shape of the enter key. Otherwise, the enter key would occupy the first two rows and the backspace key would be in the third row and thereby not meet the appellant's claim 7 requirement of being in the same row as the tab key. Chen, which the examiner relies upon for motivation to make this change, positions the tab and backspace keys next to each other just above the spacebar so they can be operated without lifting the hands from a wrist pad just below the spacebar (col. 2, lines 44-49). The examiner has not established that this disclosure would have led one of ordinary skill in the art to place next to each other Watanabe's tab and backspace keys which would be five key rows away from the wrist pad position below the keyboard in Watanabe's figure 1.



For the above reasons we conclude that the examiner has not carried the burden of establishing a *prima facie* case of obviousness of the keyboard claimed in the appellant's claim 7. Accordingly, we reverse the rejection of that claim and claims 8-10, 12 and 21 that depend therefrom.

*Claim 13*

Claim 13 requires at least three shift keys which are positioned in a lower central portion of a key array, are adapted to be engaged by thumbs of a user, are in at least two of multiple rows of keys, and are grouped directly adjacent one another.

Harada discloses a soft keyboard having a shift key on each side of a key array, and an alt key directly below each shift key (figure 3).

The examiner relies upon the computer dictionary for definitions of "alt key" and "shift key" (answer, page 5).

The examiner argues that it would have been obvious to one of ordinary skill in the art to rearrange Watanabe's two shift keys and two alt keys, which are in the same row (figure 1), such that the shift keys are in one row and the alt keys are directly below them in another row as in Harada, and to replace the alt keys with shift keys because, according to the examiner's interpretation of the computer dictionary, alt keys and shift keys have the same function (answer, page 5).

The computer dictionary indicates that both alt and shift keys can be used in combination with other keys. The dictionary, however, does not indicate that alt and shift keys perform the

Appeal No. 2003-1154  
Application No. 09/534,474

same function. The difference in the function of these keys can be seen by, for example, comparing the results obtained by pressing a shift key then a letter key versus pressing an alt key then a letter key.

Thus, the examiner has not adequately explained how the applied prior art would have led one of ordinary skill in the art to the keyboard claimed in the appellant's claim 13. We therefore reverse the rejection of that claim and its dependent claims 15-19.<sup>2</sup>

#### *Claim 1*

Claim 1 includes the above-discussed limitations in claims 7 and 13. The rejection of claim 1 is reversed for the reasons given above regarding those claims.<sup>3</sup>

#### *DECISION*

The rejections under 35 U.S.C. § 103 of claim 1 over Watanabe in view of Harada, the computer dictionary and Montgomery, claims 7-10, 12 and 21 over Watanabe in view of Chen, claims 13, 15, 16, 18 and 19 over Watanabe in view of Harada and

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<sup>2</sup> The examiner does not rely upon any disclosure in the additional reference (Maynard) applied to dependent claim 17 that remedies the deficiency in the references applied to independent claim 13.

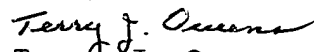
<sup>3</sup> The examiner does not rely upon Montgomery for any disclosure that remedies the deficiency in the applied prior art as to claims 7 and 13.

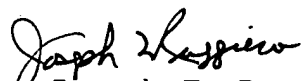
Appeal No. 2003-1154  
Application No. 09/534,474

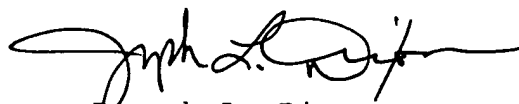
the computer dictionary, and claim 17 over Watanabe in view of Harada, the computer dictionary and Maynard, are reversed. The rejection under 35 U.S.C. § 103 of claims 2 and 22 over Klauber in view of Montgomery is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED-IN-PART*

  
Terry J. Owens  
Administrative Patent Judge

  
Joseph F. Ruggiero  
Administrative Patent Judge

  
Joseph L. Dixon  
Administrative Patent Judge

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Appeal No. 2003-1154  
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